

**AMENDMENTS TO THE CLAIMS:**

Please cancel without prejudice claims 3 and 18 and amend claims 1, 4, 5, 9, 10, 16, 19, 20, 24 and 25 as follows.

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) Apparatus for processing data, said apparatus comprising:  
at least one trace data source operable to generate an individual trace data stream  
including trace data signals and trace source identifying signals; and  
a trace bus coupled to said at least one trace data source and including trace data signal  
lines operable to carry trace data signals and trace source identifying signal lines operable to  
carry trace source identifying signals;  
a plurality of trace data sources operable to generate respective individual trace data  
streams each including trace data signals and trace source identifying signals;  
a trace data stream combiner operable to receive and to combine said individual trace  
data streams to form a combined trace data stream including trace data signals and trace source  
identifying signals, wherein a plurality of trace buses, each including said trace data signal lines  
and said trace source identifying signal lines, respectively couple said trace data sources to said  
trace data stream combiner and carry said combined trace data stream from said trace data stream  
combiner.

2. (original) Apparatus as claimed in claim 1, wherein said trace data bus includes one or more data size indicating signal lines operable to carry one or more size indicating signals indicative of how many of said trace data signal lines are carrying trace data signals.

3. (cancelled).

4. (currently amended) Apparatus as claimed in claim 3~~1~~, wherein said combined trace data stream is coupled as an input to a further trace data stream combiner to be combined with one or more further trace data streams.

5. (currently amended) Apparatus ~~as claimed in claim 1~~ for processing data, said apparatus comprising:

at least one trace data source operable to generate an individual trace data stream including trace data signals and trace source identifying signals;

a trace bus coupled to said at least one trace data source and including trace data signal lines operable to carry trace data signals and trace source identifying signal lines operable to carry trace source identifying signals; ~~and comprising~~

a trace data stream replicator operable to receive a single input trace data stream as an input and to replicate said single trace data stream to form a plurality of output trace data streams.

6. (original) Apparatus as claimed in claim 5, wherein said plurality of output trace data streams are subject to different post-replication trace data stream processing.

7. (original) Apparatus as claimed in claim 6, wherein said apparatus is an integrated circuit and one of said output trace data streams is directed to an off-chip output port and one of said output trace data streams is directed to an on-chip trace data buffer memory.

8. (original) Apparatus as claimed in claim 1, comprising a trace data filter operable to perform trace data filtering in dependence upon said trace source identifying signals.

9. (currently amended) Apparatus as claimed in claim 7 for processing data, said apparatus comprising:

at least one trace data source operable to generate an individual trace data stream including trace data signals and trace source identifying signals;

a trace bus coupled to said at least one trace data source and including trace data signal lines operable to carry trace data signals and trace source identifying signal lines operable to carry trace source identifying signals;

a trace data stream replicator operable to receive a single input trace data stream as an input and to replicate said single trace data stream to form a plurality of output trace data streams, wherein said plurality of output trace data streams are subject to different post-replication trace data stream processing, wherein said apparatus is an integrated circuit and one of said output trace data streams is directed to an off-chip output port and one of said output trace data streams is directed to an on-chip trace data buffer memory; and

comprising a trace data filter operable to perform trace data filtering upon trace data directed to said off-chip data port to form low bandwidth trace data.

10. (currently amended) Apparatus ~~as claimed in claim 1~~ for processing data, said apparatus comprising:

at least one trace data source operable to generate an individual trace data stream including trace data signals and trace source identifying signals; and

a trace bus coupled to said at least one trace data source and including trace data signal lines operable to carry trace data signals and trace source identifying signal lines operable to carry trace source identifying signals, wherein a change in trace data source upon said trace bus is accompanied by a change in said trace source identifying signals and a trace data header is output upon said trace data signal lines at a predetermined time following a change in trace data source, whereby a change in trace source identifying signals serves as a marker indicative of a position of a trace data header.

11. (original) Apparatus as claimed in claim 1, wherein said trace source comprises a software triggered trace data generator operable such that a software controlled write to one or more predetermined memory location triggers generation of a trace data stream by said software triggered trace data generator.

12. (original) Apparatus as claimed in claim 1, wherein said trace data source includes one of:

a processor core;

a digital signal processor; and

a memory bus monitor.

13. (original) Apparatus as claimed in claim 1, wherein said apparatus comprises an integrated circuit.

14. (original) Apparatus as claimed in claim 1, wherein said trace bus includes a trace data valid signal line operable to carry a valid signal generated by said trace data source and indicative of said trace data source being active to generate said trace data signals.

15. (original) Apparatus as claimed in claim 1, wherein said trace bus includes a trace data receiver ready signal line operable to carry a ready signal generated by a trace data receiver coupled to said data bus and indicative of said trace data receiver being active to receive said trace data signals.

16. (currently amended) A method of processing data, said method comprising the steps of:

generating at least one individual trace data stream including trace data signals and trace source identifying signals using a respective trace data source;

carrying trace data signals upon trace data signal lines of a trace data bus; and

carrying trace source identifying signals upon trace source identifying signal lines of said trace bus

generating a plurality of individual trace data streams each including trace data signals and trace source identifying signals with respective trace data sources; and

combining said individual trace data streams to form a combined trace data stream  
including trace data signals and trace source identifying signals upon a combined stream trace  
data bus.

17. (original) A method as claimed in claim 16, comprising carrying one or more size indicating signals lines upon data size indicating signal lines of said trace bus, said size indicating signals being indicative of how many of said trace data signal lines are carrying trace data signals.

18. (cancelled).

19. (currently amended) A method as claimed in claim ~~18~~16, wherein said combined trace data stream is combined with one or more further trace data streams.

20. (currently amended) A method ~~as claimed in claim 16~~of processing data, said method comprising the steps of:

generating at least one individual trace data stream including trace data signals and trace  
source identifying signals using a respective trace data source;

carrying trace data signals upon trace data signal lines of a trace data bus;

carrying trace source identifying signals upon trace source identifying signal lines of said  
trace bus, comprising and

replicating a single trace data stream to form a plurality of output trace data streams.

21. (original) A method as claimed in claim 20, wherein said plurality of output trace data streams are subject to different post-replication trace data stream processing.

22. (original) A method as claimed in claim 21, wherein said method is performed upon an integrated circuit and one of said output trace data streams is directed to an off-chip output port and one of said output trace data streams is directed to an on-chip memory.

23. (original) A method as claimed in claim 16, comprising filtering trace data in dependence upon said trace source identifying signals.

24. (currently amended) A method ~~as claimed in claim 22~~ of processing data, said method comprising the steps of:

generating at least one individual trace data stream including trace data signals and trace source identifying signals using a respective trace data source;

carrying trace data signals upon trace data signal lines of a trace data bus;

carrying trace source identifying signals upon trace source identifying signal lines of said trace bus,

replicating a single trace data stream to form a plurality of output trace data streams,  
wherein said plurality of output trace data streams are subject to different post-replication trace data stream processing, comprising

filtering trace data directed to said off-chip data port to form low bandwidth trace data,  
wherein said method is performed upon an integrated circuit and one of said output trace data

streams is directed to an off-chip output port and one of said output trace data streams is directed to an on-chip memory.

25. (currently amended) A method as ~~claimed in claim 16~~ of processing data, said method comprising the steps of:

generating at least one individual trace data stream including trace data signals and trace source identifying signals using a respective trace data source;

carrying trace data signals upon trace data signal lines of a trace data bus;

carrying trace source identifying signals upon trace source identifying signal lines of said trace bus, wherein a change in trace data source upon said trace bus is accompanied by a change in said trace source identifying signals and a trace data header is output upon said trace data signal lines at a predetermined time following a change in trace data source, whereby a change in trace source identifying signals serves as a marker indicative of a position of a trace data header.

26. (original) A method as claimed in claim 16, wherein a software controlled write to one or more predetermined memory location triggers generation of a trace data stream by a software triggered trace data generator.

27. (original) A method as claimed in claim 16, wherein said trace data source includes one of:

a processor core;

a digital signal processor; and

a memory bus monitor.



28. (original) A method as claimed in claim 16, wherein said method is performed upon an integrated circuit.

29. (original) A method as claimed in claim 16, comprising carrying a valid signal upon a trace data valid signal line of said trace data bus, said valid signal being indicative of said trace data source being active to generate said trace data signals.

30. (original) A method as claimed in claim 16, comprising carrying a trace data receiver ready signal upon a trace data receiver ready signal line of said trace data bus, said trace data receiver ready signal being indicative of said trace data receiver being active to receive said trace data signals.